

A NEW SUBFAMILY OF NOGODINIDAE
(HOMOPTERA: FULGOROIDEA) WITH THE DESCRIPTION OF A
NEW SPECIES OF *GASTRINIA*

R. G. FENNAH

Commonwealth Institute of Entomology, % British Museum (Natural History), London SW7 5BD, United Kingdom.

Abstract.—The genus *Gastrinia* Stål (Homoptera: Fulgoroidea) is redefined and transferred from Issidae to Nogodinidae, and a new subfamily is proposed for its reception. Supplementary characterization is provided for the type species, *G. vaginata* Stål, and a new species, *G. phidon*, is described from Minas Gerais, Brazil.

Stål (1866a) referred his genus *Gastrinia* to his new subfamily Tropicuchida, and Melichar (1914) placed it in his new tribe Hiraciini. In 1982, the present writer excluded both *Hiracia* and *Gastrinia* from the Tropicuchidae and transferred them to the Issidae. Further study of these genera has confirmed the conclusion that *Hiracia* is an issid, but has revealed that *Gastrinia* differs from both Issidae and Nogodinidae in the proportions of the abdominal laterotergites and pleurites, the shape of the spiracles, and the structure of the aedeagus and the ovipositor. However, the number and arrangement of the post-tibial and post-tarsal spines, the relationship of the basal sclerite of the tegmen with the base of the clavus, the frequency of branching and direction of the wing-veins and the proportions of the genital styles are broadly similar to corresponding features to be found in Nogodinidae, though not in combination. In view of the magnitude of the differences that separate *Gastrinia* from all other Nogodinidae, a new subfamily is now erected for its accommodation, characterized as follows.

Family Nogodinidae
Gastriniinae, NEW SUBFAMILY

Habitus broad and depressed. Pronotum much wider than head, with 2 carinae be-

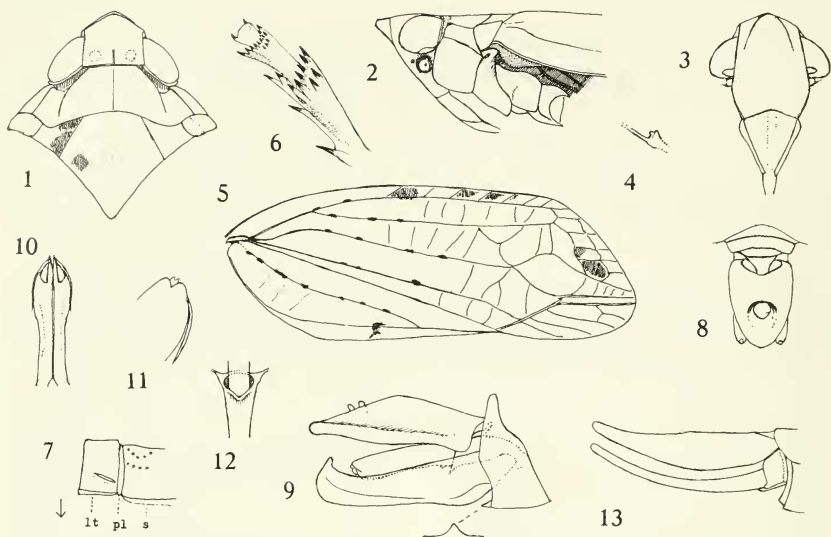
tween eye and tegula. Tegmen with basal cell absent, basal sclerite narrow and straight. Post-tibia with 10-12 long teeth apically; basal metatarsal segment rather long, with coarse teeth apically. Abdominal spiracles elongate, narrow, embedded in laterotergites strongly obliquely to lower margin; laterotergites IV-VI not much longer than broad, and much broader than pleurites. Genital style elongate, with narrow sides and a short process dorsally at apex. Aedeagus with a short basal collar.

With the exception of the number of apical teeth on the post-tibia, none of the above characters occurs in the nominate subfamily.

Gastrinia Stål

Gastrinia Stål, 1859: 319. Type species, *Gastrinia vaginata* Stål.

Vertex pentagonal. Frons strongly deflexed ventrocaudad, median disc prominent at base, sublateral carinae curving mesad basally and not meeting anterior margin of vertex. Post-clypeus with sides very narrow, and visible in anterior view. Antennae with second segment globose or nearly so, infusate except at apex, with palpal disc sensilla, microsetae minute, macrosetae apparently absent. Ocelli present. Rostrum distally overlapping post-coxae.



Figs. 1-13. 1-12, *Gastrinia phidon*. 1, Head and thorax, dorsal view. 2, Head, thorax and base of tegmen, side view. 3, Frons and clypeus, anteroventral view. 4, Basal part of third antennal segment. 5, Tegmen. 6, Apex of post-tibia and basal 2 segments of metatarsus, ventral view. 7, Laterotergite with spiracle (lt), pleurite (pl) and lateral part of sternite (s) of fourth abdominal segment. 8, Ninth abdominal segment and anal segment of male, anterodorsal view. 9, Male genitalia, right side. 10, Aedeagus, ventral view. 11, Apex of aedeagus, left side, with spinose process slightly displaced outward. 12, Phallobase (suspensorium), posteroventral view, with basal part of phallus emerging from orifice. 13, *Gastrinia vaginata*. Female genitalia, right side.

Pronotum much wider than head, and broader than long in middle (about 4:1), disc slightly produced anteriorly, posterior margin shallowly concave; 2 carinae between eye and tegula. Mesonotum almost flattened, with lateral carinae strongly converging cephalad. Tegula large, exposed, and abruptly decurved. Post-trochanters rocking mesad-laterad. Post-tibia with 4 spines laterally, 10-12 apically. Basal metatarsal segment with 10-13 coarse teeth and a tract of sparse long setae; second segment with 2 teeth; apical margin between them shallowly convex. Tegmen coriaceous, distally sub-tectiform, costal and commissural margins parallel, and apical margin angulate, scarcely surpassing abdomen, Sc+R scarcely bent at junction with M basally, M and Cu₁ simple to beyond level of apex of clavus, an oblique row of veinlets from apex of clavus

to M near apical margin. Basal cell obsolete, basal sclerite narrow, straight. Wing-tucking process absent. Wing ample, with apical margin not deeply cleft, and costal margin straight. Venation regular, not bent anteriorly in distal half, M with 2-3 branches apically, Cu, with 3-5 branches, apical cells almost parallel-sided, much longer than broad. Abdomen strongly dorsoventrally compressed; tergites narrowly divided by membrane along middle line, sternites not divided medially, laterotergites large, little longer than broad, and several times broader than pleurites; spiracles greatly elongated, embedded in laterotergites strongly obliquely to lower margin. Pygofer relatively short, with a small angulate medioventral process. Aedeagus long, straight and tubular, supported in basal quarter by a short tubular suspensorium. Genital style elon-

gate, with narrow sides and a short process dorsally at apex. Anal segment of female elongate, with lateral margins deep and decumbent. Ovipositor elongate, slender and perfect.

Gastrinia vaginata Stål

Fig. 13

Gastrinia vaginata Stål, 1859: 319.

Hiracia lacerdae Signoret, 1861: 57. (syn.)
Stål, 1866b: 393.

Female (supplementary description).—Length with tegmen, 15 mm; tegmen, 11.8 mm.

Vertex broader than long (almost 1.2:1). Frons longer medially than broad (1.2:1), medially ecarinate. Rostrum with apical segment longer than broad in side view (6.6:1). Basal metatarsal segment with 13 teeth apically, longer dorsally in middle line than wide between tips of outermost teeth (1.9:1), and than length of outer apical spine measured from level of apex of mid-dorsal margin (2.1:1). Second metatarsal segment longer dorsally than wide between apical spines (about 1.2:1). Tegmen longer than broad (3.0:1), cell PCu longer than common claval vein (about 1.3:1).

Tegmen with 2 narrow oblique bands from Sc to basal angle of clavus and from Sc to apex of clavus, reddish brown.

Ninth abdominal segment very short dorsally, overlapped by seventh and eighth tergites. Anal segment in side view longer than deep dorsoventrally (about 4.5:1), narrowing and weakly ascending distad and narrowly rounded apically; sides decumbent, ventral surface deeply hollowed to ensheath ovipositor; anal foramen situated at middle. Ovipositor slender, much longer than deep in side view (about 18:1), of almost equal width throughout, and weakly ascending distad. Seventh sternite short, not quite overlapped by sixth, with hind margin weakly concave; area between this and base of ovipositor apparently consisting of tough membrane, and with a weak median ridge.

Material examined. 1 ♀, Brazil, Bahia (coll. Signoret).

This specimen, determined by Stål as belonging to his *G. vaginata*, (Melichar 1914: 210) agrees with the description and illustration of *Hiracia lacerdae* given by Signoret, and also agrees with the description of *Gastrinia vaginata* Stål based on a female from Bahia, and with the figure of *G.* (= *Amfortas*) *vaginata* Stål given by Melichar (1914: fig. 30). It is one of two specimens from Bahia in the Signoret Collection in the Naturhistorisches Museum, Vienna, and the only one that agrees with the original description of *H. lacerdae*. It is here designated as the lectotype, and has been labelled as such.

The status of the second female from Bahia in the Signoret Collection, labelled "Bahia, Coll. Signoret, det. Signoret," and considered to be specifically distinct from *G. vaginata* by Melichar must remain unsettled until further material is available for study. It is not mentioned by Signoret, and its size and tegminal marking are not covered by the description given for *H. lacerdae*.

The length/greatest breadth ratios of the frons, apical segment of the rostrum, basal metatarsal segment, second metatarsal segment and tegmen are 1.2:1, 5.1:1, 1.6:1, 1.2:1 and 2.9:1, respectively, and the ratio of lengths of tegminal cell PCu/common claval vein, about 1.3:1.

Gastrinia phidon Fennah, NEW SPECIES

Figs. 1–12

Male.—Length with tegmen, 9.0 mm; tegmen, 7.0 mm. Vertex broader than long (slightly less than 1.1:1). Frons longer medially than broad (1.2:1), feebly medially carinate in distal half. Rostrum with apical segment longer than broad in side view (4.9:1). Basal metatarsal segment with 12 teeth apically, longer dorsally in middle line than wide between tips of outermost teeth (1.5:1), and than length of outer apical spine

measured from level of apex of mid-dorsal margin (1.9:1). Second metatarsal segment longer dorsally than wide between apical spines (1.1:1). Tegmen longer than broad (2.6:1), cell PCu longer than common claval vein (2.6:1). Wing with Sc 2-3 branched, R simple, M and Cu₁ each with 3 branches, PCu forked basad of level of Cu₁ fork.

Dorsally yellowish brown, mottled with paler spots. Mesonotum with a suffusion in each lateral field and a small round spot near each posterolateral margin of disc, piceous. Lower surface of thorax and legs more or less reddish brown, mottled with pale round spots; abdomen ventrally pale brown with fuscous spots at base of setae. Tegmen light yellowish brown, with light reddish brown markings in depressions; venation coarse, with supernumerary irregular veinlets, mostly concolorous, but with a few spots on main veins in corium and clavus and a larger spot close to M₁₊₂ subapically, dark reddish brown or piceous. Wing uniformly dilute fuscous, apical veins almost concolorous, but orange brown on margin at apices of R, M and Cu₁; longitudinal veins slightly darker.

Anal segment of male relatively large, in dorsal view widest near base, with lateral margins curving to deeply rounding apex; anal orifice in distal half; anal style very short. Pygofer with lateral margins sinuate, dorsolateral angles obscure; medioventral process broader at base than long. Aedeagus porrect caudad, with lateral margins of phallobase meeting at an obtuse angle below phallus in basal quarter; a pair of delicate spinose processes ventrolaterally near apex of aedeagus, each directed cephalad and lying close against ventrolateral surface. Genital style in side view about 3.5 times as long as wide, and widest near base, stiffened with a shallow ridge internally, extending from base to apex; dorsal and ventral margins gradually converging distad in basal three-quarters, thence subparallel; apical margin shallowly rounded, shortly produced dor-

sally in a peg-like process. Length, 9.0 mm; tegmen, 7.0 mm.

Holotype ♂.—Brazil: Minas Gerais, Pedra Azul, xii. 1970, (F. M. Oliveira) in British Museum (Natural History).

This species differs from *G. vaginata* and the second specimen of *Gastrinia* in the Signoret collection in the ratio of the basal width of the frons to the width at the frontoclypeal suture (about 1.1:1 in *G. phidon* and 1.3:1 in the other two), the ratio of length to width in the tegmen (2.6:1 in *G. phidon* and 3.0:1 and 2.9:1 in the others) and the relative lengths of cell PCu and the common claval vein in the tegmen (2.6:1 in *G. phidon* and about 1.3:1 in the others).

The name *phidon* is a classical personal name, and is used in apposition.

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LITERATURE CITED

- Fennah, R. G. 1982. A tribal classification of the Tropiduchidae (Homoptera: Fulgoroidea), with the description of a new species on tea in Malaysia. Bull. Entomol. Res. 72: 631-643.
- Melichar, L. 1914. Monographie der Tropiduchiden. Verh. Naturforsch. Ver. Brunn 53: 1-145.
- Signoret, V. 1861. Description de quelques Hémiptères nouveaux. Ann. Soc. Entomol. Fr. (4): 55-58.
- Stål, C. 1859. Novae quaedam Fulgorinorum formae speciesque insigniores. Berl. Entomol. Zeit. 3: 313-327.
- . 1866a. Hemiptera Homoptera Latr. Hemiptera Africana 4: 1-276.
- . 1866b. Analecta hemipterologica. Berl. Entomol. Z. 3: 319.